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CATALOG OF SKYLAB INFORMATION

MSFC Public Affairs Office

NASA

*George C. Marshall Space Flight Center
Marshall Space Flight Center, Alabama*

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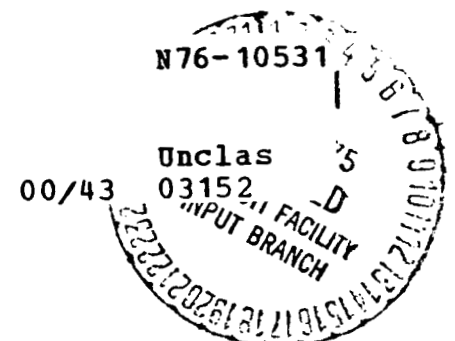


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INTRODUCTION

This is a compilation of information related to Skylab produced through October 1974.

This publication is not intended as a catalog of available information but rather as a resource or reference guide of the material that was produced.

Though most of the items listed herein are no longer available for general distribution, many of them are on file at NASA Headquarters and at the various NASA centers. Some may be furnished on occasion for educational purposes and for radio and television broadcasts.

Six categories of data are listed.

- | | |
|--------------------|------------------|
| o Publications | o Exhibits |
| o Films | o Photographs |
| o Television tapes | o Skylab reports |

Some of the preceding categories are subdivided into general interest and technical sections. However, these divisions are somewhat overlapping.

Pertinent information is provided in parenthesis following the listed titles. In all cases, an originating source code (OC-1, OC-2, etc.) is provided if available, the year or time-frame of publication, issue or occurrence is shown. For data collected aboard Skylab, the flight number is shown. Skylab flights correlate to the following periods: Skylab 2, May 25-June 22, 1973; Skylab 3, July 28-Sept. 25, 1973; and Skylab 4, Nov. 16, 1973 - Feb. 8, 1974.

ORIGINATING SOURCE CODE (OC)

The following is a listing of sources of Skylab information together with an originating source code.

- OC-1 Superintendent of Documents
U. S. Government Printing Office
Washington, D.C. 20402
- OC-2 National Aeronautics and Space Administration
Public Affairs Office
Washington, D.C. 20546
- OC-3 NASA George C. Marshall Space Flight Center
Public Affairs Office
Marshall Space Flight Center, Alabama 35812
- OC-4 NASA Lyndon B. Johnson Space Center
Public Affairs Office
Houston, Texas 77058
- OC-5 National Aeronautics and Space Administration
Historical Office
Washington, D. C. 20546
- OC-6 National Aeronautics and Space Administration
Public Affairs Desk
Technology Utilization Office, Code K
Washington, D. C. 20546
- OC-7 NASA George C. Marshall Space Flight Center
Skylab Program Office
Marshall Space Flight Center, Alabama 35812
- OC-8 NASA Lyndon B. Johnson Space Center
Management Operations Office
Bioengineering Systems Division
Houston, Texas 77058
- OC-9 National Aeronautics and Space Administration
Office of Manned Space Flight
Washington, D. C. 20546
- OC-10 NASA George C. Marshall Space Flight Center
Manned Flight Awareness Office
Marshall Space Flight Center, Alabama 35812
- OC-11 NASA George C. Marshall Space Flight Center
Management Services Offices
Marshall Space Flight Center, Alabama 35812

- OC-12 National Aeronautics and Space Administration
Director Educational Program Code FE
Washington, D. C. 20546
- OC-13 NASA Lyndon B. Johnson Space Center
Management Operations Office
Project Support Division
Medical Research & Operations Directorate
Houston, Texas 77058
- OC-14 NASA Goddard Space Flight Center
Public Affairs Office
Greenbelt, Maryland 20770
- OC-15 NASA Lyndon B. Johnson Space Center
PTD Audiovisual and Motion Picture Production Office - JL131
Houston, Texas 77058
- OC-16 Other

For general information on NASA and its programs inquiries may be directed to the Public Affairs Office at the NASA Center, as indicated in the list below:

Alaska
Arizona
California
Hawaii
Idaho
Montana
Nevada
Oregon
Utah
Washington
Wyoming

NASA Ames Research Center
Moffett Field, California 94035

Alabama
Arkansas
Iowa
Louisiana
Mississippi
Missouri
Tennessee

NASA George C. Marshall Space Flight Center
Marshall Space Flight Center, Alabama 35812

*Connecticut
Delaware
District of Columbia
*Maine
Maryland
*Massachusetts
*New Hampshire
New Jersey
*New York
Pennsylvania
*Rhode Island
*Vermont

NASA Goddard Space Flight Center
Greenbelt, Maryland 20771

Florida
Georgia
Puerto Rico
Virgin Islands

NASA John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

Kentucky
North Carolina
South Carolina
Virginia
West Virginia

NASA Langley Research Center
Langley Station
Hampton, Virginia 23365

Illinois
Indiana
Michigan
Minnesota
Ohio
Wisconsin

NASA Lewis Research Center
21000 Brookpark Road
Cleveland, Ohio 44135

Colorado
Kansas
Nebraska
New Mexico
North Dakota
Oklahoma
South Dakota
Texas

NASA Johnson Space Center
Houston, Texas 77058

*For film requests write to:

National Audiovisual Center (GSA)
Washington, D.C. 20409

PUBLICATIONS

The following is a list of publications, (books, booklets, pamphlets, and brochures) containing Skylab information.

GENERAL INTEREST PUBLICATIONS:

Preliminary chronology, Skylab (1973; 180 pages;
OC-5) HHN-130

A management chronology, beginning with Skylab concept, covering period from July 1959 through May 1973.

Space Applications (1972; 13 pages; OC-2)
Management summary of NASA programs.

Benefits from NASA-Developed Technology (1972; 59 pages;
OC-2)

Describes many benefits resulting from the application of space technology to uses on Earth. Provides a general description of the Skylab Sleep Monitoring Experiment.

Skylab Student Project Summary Description (1973; 83 pages;
OC-7) MSFC-SL-73-3

Brief review of student project. Includes Skylab mission summary, student experiment selection and student experiment hardware descriptions. Illustrated. Students and science advisors identified. Defines experiment objectives, implementation, and data and analysis requirements.

ATM Apollo Telescope Mount (Pamphlet; OC-3)
Summary of Skylab solar observatory experiments, experiment control panel and provides a brief background relative to the ATM.

Skylab, an Adventure in Science and Photography (1974; pamphlet;
OC-3)

Summary of photographic experiments, cameras and film carried aboard Skylab.

Skylab, Working on a New Frontier (1973; brochure; OC-3)

Summary of various aspects of Skylab; several on-board photographs of crew activity. Published during the second manned mission.

Kohoutek, Comet of Century (1973; brochure; OC-3)

Basic description of comets, a general background on the Kohoutek Comet including planned activities.

Skylab Operations Summary (1974; 7 pages; OC-3)

Four-page summation of Skylab early problems, Skylab accomplishments and crew activities, plus three pages of fact sheets showing crew time devoted to various activities.

Skylab (1972; pamphlet; OC-2)

Pre-mission summary of planned Skylab activities.

Improving our Environment (1973; pamphlet; OC-2)

Summary of Skylab, other spacecraft and NASA technologies being used in Earth research and monitoring of Earth's environment.

NASA Facts, Skylab 1973-1974 (1974; 8 pages; OC-2)

Summary of Skylab mission activities. Includes photographs of crewmen. Also lists information sources.

NASA Facts, Food for Space (Brochure; OC-4)

Evolution of food packaging and serving techniques. Devoted primarily to Skylab.

Mission Report, First Mission (1973; 8 pages; OC-2) MR-13

Summary of Skylab problems prior to launch of first crew, repairs made to Skylab and other mission highlights.

Mission Report, Second Mission (1973; 8 pages; OC-2) MR-14

Skylab events, achievements and preliminary findings summarized for the second manned mission.

Skylab (1973; pamphlet; OC-10)

Manned Flight Awareness Orientation to Skylab including mission objectives, module configuration launch vehicles and summary profile of each manned mission.

Skylab 1 and 2, Science and Engineering in Orbit (Pre-mission; pamphlet; OC-10)

Crew biography, experiments scheduled, typical work day, Skylab description by module and launch vehicle illustration.

Skylab 3, Science and Engineering in Orbit

(Premission; pamphlet; OC-10)

Crew biography, experiments scheduled, typical work day, illustrated modular description of Skylab and launch vehicle illustration.

Skylab Illustrated Chronology, 1962-1973 (1973; 118 pages; OC-11) MHR-9

Historical summary of Skylab from concept through launch readiness at the Kennedy Space Center.

NASA Facts--Skylab (1972; fold-out; OC-1)

Pictorial review of Skylab experiment categories, mission sequence and a 21" by 24" reproduction of a Skylab painting (cut-away view).

NASA National Aeronautics and Space Administration (Pamphlet; OC-1)

General information relative to Skylab and other NASA programs. Skylab goals and planned mission. Lists NASA facilities with briefs relative to the responsibilities of each.

Toward a Better Tomorrow with Aeronautical and Space Technology (1973; 199 pages; OC-1)

Space program presentation to Committee on Aeronautical and Space Sciences (93rd Congress, First Session). Covers total space program including projections. Contains briefs on Skylab biological space processing and manufacturing in space, and use of Skylab remote biomedical sensors in Earth-based medical programs.

Skylab Program Description (1971; 64 pages; OC-1)

General Skylab information published in agreement with National Science Teachers Association. Provides Skylab background for students participating in Skylab Student Project. Provides briefs of physical science experiments.

Information for Teachers (1971; brochure; OC-12)

Aid to teachers in formulating opinions and the educational benefits of Skylab solar experiment data.

Skylab 4, Third Manned Mission for America's First Space Station (Prelaunch; pamphlet; OC-10)

Crew biography, experiments scheduled, typical work day, illustrated modular description of Skylab and launch vehicle, summary of Skylab 2 and 3 including on-board photographs.

Skylab Experiments General Descriptions (1971; 129 pages; OC-7)

Abbreviated descriptions of experiments for which MSFC had development or integration responsibility. Contains experiment purpose, description, significance, and principal investigator. Photographs included.

Space Station: Key to the Future (Premission; 40 pages; OC-1) EP-75

Manned utilization of space discussed from a space station point of view. Skylab identified as a forerunner. Discussed are areas of study and future returns, and space station concepts. Illustrations and photographs.

Narrative Account of the Role Played by the NASA Marshall Space Flight Center in the Skylab SL-1 & 2 Emergency Operations, May 14-June 22, 1973 (96 pages; OC-3)

Play-by-play account of activities after the loss of the Skylab meteoroid shield through repair by the astronauts.

Space Among Us (1973; 133 pages; OC-14) X-207-72-27

An assembly of some effects of space research on society. Appendices provide excerpts from related articles and speeches.

Film Catalog, Lyndon B. Johnson Space Center (50 pages; OC-15)

Includes 16 mm Skylab film available for loan from Houston. A supplement provides updates to the catalog.

Aerospace Bibliography (1972; 116 pages; OC-12) EP-48

For teachers and adult readers an updated list of books, references, periodicals, and other educational materials related to space flight and space science.

Skylab Film Resources Catalog (1974; 75 pages; OC-4)

Five categories of film materials are included in this catalog; sound productions, newsclips and stock footage, kinescopes, inflight footage, and student project experiments.

TECHNICAL PUBLICATIONS

Skylab Experiments, Information for Teachers

All volumes are suitable for adaptation to classroom curricula. Each illustrates and describes experiments including the methods of performance aboard Skylab.

Volume 1--Physical Science, Solar Astronomy
(1973; 63 pages; OC-1) EP-110

Volume 2--Remote Sensing of Earth Resources
(1973; 83 pages; OC-1) EP-111

Volume 3--Materials Science (1973; 49 pages;
OC-1) EP-112

Volume 4--Life Sciences (1973; 89 pages; OC-1)
EP-113

Volume 5--Astronomy and Space Physics (1973;
73 pages; OC-1) EP-114

Volume 6--Mechanics (1973; 27 pages; OC-1) EP-115

Volume 7--Living and Working in Space (1973; 39
pages; OC-1) EP-116

Skylab and the Life Sciences (1973; 56 pages; OC-8)

Illustrated summary of biomedical monitoring requirements, biomedical experiments and the equipment used in the Skylab biomedical program.

Earth Resources Survey Systems (1972; 371 pages; OC-1)

Proceedings from an international workshop. Defines remote sensing techniques and uses of data attained; defines use of satellites--including Skylab--in Earth resources data collection.

Skylab and the Sun (1973; 50 pages; OC-1) EP-119

Describes the Sun, the Skylab program, Skylab solar studies, Skylab observation instruments and systems, and associated programs that supported Skylab solar observation activities.

Skylab Earth Resources Investigations (1973; 63 pages; OC-1)

Identifies objectives of the Skylab Earth resources investigations, defines domestic and foreign investigation locale, and lists associated principal investigators.

Skylab, A Guidebook (1973; 345 pages; OC-1)
Skylab purpose, history and description of modules, systems and experiments. Includes summary of supporting ground-based astronomy program.

Skylab Experiments (1972; 211 pages; OC-9)
Description of Skylab experiments, objectives, hardware, and data return requirements.

Skylab Experiment Integration Summary (1972; 84 pages; OC-7)
Provides descriptive and illustrated information covering the Skylab program, particularly of the experiment sensors, instruments and the experiment objectives.

Skylab News Reference (1973; 330 pages; OC-2)
Explanation of Skylab modules, systems and experiments. Contains crew biographies, launch facilities and their operation, flight operations, and other topics.

Technical Summary Handbook (1971; 70 pages; OC-9)
Basic technical information for background knowledge. Covers launch vehicles, Skylab space station and Command and Service Modules. Explains seven categories of Skylab experiments.

Skylab Experiment Data Summary (1973; 66 pages; OC-7) MSFC-SL-73-4
Summary of Skylab program, mission profile and activities, Skylab and launch vehicle physical data, Skylab modules and systems, crew synopsis, experiment data.

Skylab Program Experiments Technical Summary (1971; 189 pages; OC-2)
Information is presented in viewgraph format. Photographs are included.

Information for Teachers (1972; 40 pages; OC-1) EP-106

Brief descriptions of Skylab program, Skylab student project, student experiment selection and student experiment performance; includes samples of proposals submitted by students and appropriate classroom activities related to the student experiments.

Space and Science Teachers' Guide (1973; 20 pages; OC-3)

Booklet describing 16 educational TV tapes designed for junior high school science classes. Each TV program has a brief summary. To aid teachers in planning. See ETV programs - page 17 of this document.

Science from Skylab Teachers' Guide (1974; 20 pages; OC-3)

Booklet describing 16 educational TV tapes designed for junior high school science classes. Each TV program has a brief summary. To aid teachers in planning. See ETV programs - page 17 of this document.

Biomedical Experiments and Systems in Skylab (1971; 75 pages; OC-13)

Included for each experiment are key personnel, purpose, historical background, data requirements, and system description. Photographs.

Following completion of the Skylab mission in February, 1974, technical reports were prepared on the mission, various projects, Skylab systems, and other special subjects. These reports may be available for a nominal cost from the National Technical Information Service, Springfield, Virginia 22151.

MSFC Skylab Final Program Report (1974; 526 pages; OC-7) TM X-64808

This report presents a concise technical history and managerial critique of the MSFC role in the Skylab program. The report also includes recommendations and conclusions applicable to hardware design, test program philosophy and performance, and program management techniques with potential application to future programs.

MSFC Skylab Corollary Experiments Final Technical Report (1974; 84 pages; OC-7) TM X-64809

This report presents the evolution of the development and integration of Skylab experiments from initial concepts through mission operations. All experiment systems are covered as well as management controls which were developed and exercised to assure acceptable operational capability and optimize data acquisition for final scientific results.

MSFC Skylab Airlock Module Final Technical Report (1974; Volume I - 649 pages, Volume II - 551 pages; OC-7) TM X-64810

This report presents the history and development of the Skylab Airlock Module and the Payload Shroud, from initial concept through final design, related test programs, mission performance and lessons learned.

MSFC Skylab Apollo Telescope Mount Final Technical Report (1974; 422 pages; OC-7) TM X-64811

This report documents the history of the development of the ATM from initial concept through its final design and mission performance. A comprehensive discussion of the final module design, related test programs and lessons learned is included.

MSFC Skylab Multiple Docking Adapter Final Technical Report (1974; Volume I - 468 pages, Volume II - 323 pages; OC-7) TM X-64812

This report presents the history of the development of the Skylab Multiple Docking Adapter (MDA), from initial concept through its final design, related test programs, mission performance, and lessons learned.

MSFC Skylab Orbital Workshop Final Technical Report (1974;
Volume I - 562 pages, Volume II - 412 pages, Volume III -
668 pages, Volume IV - 526 pages, Volume V - 448 pages;
OC-7) TM X-64813

This report documents and summarizes the results of the
Orbital Workshop technical contract including development,
verification, mission performance, and conclusions based
on program results and experience.

Skylab Mission Report - Saturn Workshop (1974; OC-7)
TM X-64814

This report presents the Skylab's Saturn Workshop mission
performance. A variety of experiments were conducted to
determine man's ability to live and work in space for
extended periods, to make Sun and Earth investigations,
and to advance science and technology in several areas of
space applications. Performance is compared with design
parameters, and problem causes and solutions are treated.
This report has not been released.

MSFC Skylab Apollo Telescope Mount Summary Mission Report
(1974; 138 pages; OC-7) TM X-64815

This report presents a summary of the Apollo Telescope
Mount (ATM) performance during the 8.5-month Skylab mission.
The report contains a brief description of each ATM system,
system performance summaries, discussion of all significant
ATM anomalies and a summary of the Skylab ATM Calibration
Rocket Project (CALROC).

MSFC Skylab Mission Sequence Evaluation Report (1974; 103 pages;
OC-7) TM X-64816

This report presents the planned and actual major Skylab
sequences. Off-nominal events are highlighted. Differences
between planned and actual events are discussed.

MSFC Skylab Attitude and Pointing Control System Mission Evaluation
Report (1974; 426 pages; OC-7) TM X-64817

This report has not been released.

MSFC Skylab Electrical Power System Mission Evaluation Report
(1974; 476 pages; OC-7) TM X-64818

This report presents the planned and actual major Electrical
and Caution and Warning performance. Off-nominal events
are highlighted. Differences between planned and actual events
are discussed.

MSFC Skylab Instrumentation and Communication System Mission
Evaluation Report (1974; 244 pages; OC-7) TM X-64819

This report presents an evaluation of the in-orbit performance
compared with functional requirements and the fidelity of
communications. In-orbit performance includes processing
engineering, scientific, experiment, and biomedical data,
implementing ground-generated commands, audio and video
communication, generating rendezvous ranging information
and radio frequency transmission and reception.

MSFC Skylab Corollary Experiments Systems Mission Evaluation
Report (1974; OC-7) TM X-64820

This report has not been released.

MSFC Skylab Apollo Telescope Mount Experiments Systems
Mission Evaluation Report (1974; 173 pages; OC-7)

TM X-64821

This report presents a detailed evaluation of the Skylab Apollo Telescope Mount (ATM) experiments performance throughout the eight and one-half month Skylab Mission. Descriptions and the objectives of each instrument are included. Also included is a discussion of the anomalies experienced, the causes, and corrective actions taken. Conclusions, based on evaluation of the performance of each instrument, are presented.

MSFC Skylab Thermal and Environmental Control Systems
Mission Evaluation Report (1974; 479 pages; OC-7)

TM X-64822

This report presents an evaluation of the performance of the Skylab Thermal and Environmental Control System. Actual performance is compared to design and functional requirements and anomalies and discrepancies and their resolution are discussed.

MSFC Skylab Apollo Telescope Mount Thermal Control System
Mission Evaluation Report (1974; OC-7)

TM X-64823

This report has not been released.

MSFC Skylab Structures and Mechanical Systems Mission
Evaluation Report (1974; OC-7) TM X-64824

This report has not been released

MSFC Skylab Crew Systems Mission Evaluation Report
(1974; 386 pages, OC-7) TM X-64825

This report presents a concise performance evaluation of MSFC responsible Skylab Crew System Hardware. This report also includes hardware design descriptions, post-mission assessments, and hardware design recommendations with potential application to future programs.

MSFC Skylab Contamination Control Systems Mission
Evaluation Report (1974; 243 pages; OC-7) TM X-64826

The report summarizes the Skylab system and experiment contamination control evaluation. The Cluster systems and experiments evaluated include Induced Atmosphere, Corollary and ATM Experiments, Thermal Control Surfaces, Solar Array Systems, Windows, and Star Tracker.

MSFC Skylab III and IV Science Demonstrations Preliminary
Report (1974; 26 pages; OC-7) TM X-64835

This report presents the twelve Marshall Space Flight Center science demonstrations which were accomplished on the Skylab III and IV missions. These were defined in response to crew requests for time-gap fillers and were designed to be accomplished using onboard equipment.

Retention and Application of Skylab Experiment Experiences to Future Programs (1974; 51 pages; OC-7) TM X-64839

This report consolidates into one listing certain outstanding problems encountered on Skylab Experiments in order that these experiences and associated recommendations might help to prevent similar problems on future programs. The criteria for selection of the data to be utilized in this document was to identify the problem areas within the Skylab Program which it was felt would be a major significance with respect to future programs.

Vehicle Misalignment Predictions and Vehicle Experiment Pointing Compatibility Assessment (1974; 69 pages; OC-7) TM X-64840

This report presents a technique for predicting vehicle misalignment, the relationship of vehicle misalignment to the total vehicle/experiment integration effort, and the methodology used in performing a vehicle/experiment pointing compatibility assessment.

MSFC Skylab Neutral Buoyancy Simulator Report (1974; 180 pages; OC-7) TM X-64844

This report presents the role of the Neutral Buoyancy Simulator in the development, crew training, and flight operational aspects of Skylab.

MSFC Skylab Operations Summary Report (1974; 137 pages; OC-7) TM X-64845

This operations report is a summary of the actions and problems MSFC encountered, together with procedures and staffing required to provide the mission support role. This report has been prepared as a reference for future operations planning as well as an evaluation report for the Skylab mission.

MSFC Skylab ATM Calibration Rocket Project Final Report (1974; 155 pages; OC-7) TM X-64846

This report provides the results of the Apollo Telescope Mount (ATM) Calibration Rocket (CALROC) performances and anomalies encountered. The performance period included six CALROC flights during the Skylab 2, 3 and 4 missions as well as those rocket flights prior to the Skylab mission which carried CALROC hardware for test purposes. Background material such as project purpose, management, launch facilities, booster and payload configuration is included for better understanding of the CALROC payload and its mission objectives.

MSFC Skylab Systems Safety Checklist (1974; 76 pages;
OC-7) TM X-64850

This report presents design criteria statements applicable to a wide variety of flight systems, experiments and other payloads, associated ground support equipment and facility support systems.

MSFC Skylab Thruster Attitude Control Systems (1974; 109 pages;
OC-7) TM X-64852

This report documents the preflight activities and the Skylab mission support effort for the Thruster Attitude Control System (TACS). The preflight activities include a description of problems and their solutions encountered in the development, qualification, and flight checkout test programs. The mission support effort is presented as it relates to system performance assessment, real-time problem solving, flight anomalies, and the daily system evaluation. Finally, the detailed flight evaluation is presented for each phase of the mission using system telemetry data.

Retention and Application of Skylab Experiences to Future Programs (1974; OC-7) TM X-64853

This report has not been released.

MSFC Skylab Film Vault Evaluation Report (1974; OC-7)
TM X-64854

This report has not been released.

MSFC Skylab Extravehicular Activity Development Report
(1974; OC-7) TM X-64855

This report has not been released.

MSFC Skylab Lessons Learned (1974; 71 pages; OC-7)
TM X-64860

This report presents key lessons learned during the Skylab Program that could have impact on on-going and future programs. These experiences from a complex space program management and space flight serve as an early assessment to provide the most advantage to programs underway.

MSFC Skylab Ground Based Astronomy Program (1974; OC-7)
TM X-64882

This report has not been released.

MSFC Skylab Student Project Report (1974; 69 pages; OC-7)
TM X-64866

This report presents the background of the Skylab Student Project, emphasizes experiment performance and is considered interim in that while results and evaluations are touched upon, detailed reporting is considered the responsibility and prerogative of student investigators.

TELEVISION TAPES

Thirty-two science oriented television programs were recorded in two series of sixteen programs each by the Marshall Space Flight Center in cooperation with the Alabama State Department of Education. All programs are suitable for transmitted or closed circuit television. They are intended to supplement high-school science education programs, but benefits could also be realized by the students in lower grades. Synopses booklets are listed on page 11. For information, contact the MSFC Public Affairs Office or the educational television coordinator, Alabama Department of Education, Montgomery, Alabama.

Television was recorded aboard Skylab and was transmitted to Earth. Scenes of astronauts performing general activities, experiments, and science demonstrations and scenes of the astronauts providing a guided tour of the Skylab space station are recorded and are on file in the video tape libraries of the Johnson Space Center and the Marshall Space Flight Center.

Requests for information concerning availability of these tapes should be directed to the respective Public Affairs Office of these two Centers.

EDUCATIONAL TELEVISION PROGRAMS:

Space and Science Series

The Earth, The Sun, The Universe (1973; 20 minutes; Program No. 1
(OC-3)

Provides an explanation of the universe, including terminology used in astronomy. Relates the Solar System to the universe and introduces the "Space and Science" series of programs.

Sources of Deep Space Radiation (1973; 20 minutes; Program No. 2
OC-3)

Defines and locates radiation sources, describes star structure and evolution, defines methods of search and briefly describes the effects of radiation on the Earth's environment.

Our Protective Atmosphere (1973; 20 minutes; OC-3) Program No. 3

Provides a space-age point of view relative to Earth's atmosphere, defines techniques used to acquire new knowledge and stimulates an attitude of respect for the atmosphere.

Space Power Generation (1973; 20 minutes; OC-3) Program No. 4

Describes solar cells, radioisotope thermoelectric generators and fuel cells. Portrays potential solutions to Earth's energy crisis.

Mass Determination in Zero G (1973; 20 minutes; OC-3) Program No. 5

Defines the difference between mass and weight, explains the universal character of mass, portrays mass measurement techniques used in the absence of gravity and stresses the need to think in terms of universal laws of physics.

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| Behavioral Studies (1973; 20 minutes; OC-3)
Defines the need for behavioral preparation of both men and women in future, very long duration space flights. Thought provoking, without solutions. | Program No. 6 |
| Physical Fitness in Space (1973; 20 minutes; OC-3)
Explains the different body systems in relation to Skylab experiments. Through an astronaut's personal experience, defines the need for balancing intellectual pursuits with physical fitness. | Program No. 7 |
| Living and Working in Space (1973; 20 minutes; OC-3)
Amplifies the role of gravity in every-day living and allows an interpretive comparison between life in space and on Earth. | Program No. 8 |
| Long Distance Medical Aid (1973; 20 minutes; OC-3)
Illustrates advances in medical technology as a fallout of the space program and defines technology uses here on Earth. | Program No. 9 |
| New Energy Resources (1973; 20 minutes; OC-3)
Explains current energy inefficiencies and defines steps now being taken for transition to new energy systems. | Program No. 10 |
| Materials Processing in Space (1973; 20 minutes; OC-3)
Defines techniques for processing materials such as metal and crystal structures and illustrates the effects of gravity to these forms. Includes welding, cutting and melting. Presents propagation and the control of fire in space. | Program No. 11 |
| Growing Perfect Crystals in Space (1973; 20 minutes; OC-3)
Comparison of natural and Earth-grown synthetic crystals to synthetic crystals grown in space. Defines uses of crystals and method for growing them. | Program No. 12 |
| Vegetation Studies by Remote Sensing (1973; 20 minutes; OC-3)
Defines use of infrared spectroscopy in remotely sensing amount, type and condition of vegetation. Covers various methods used for remote sensing. | Program No. 13 |

Mineral Detection (1973; 20 minutes; OC-3) Program No. 14
Defines mineral depletion and stresses the need for minerals management to preclude depletion of resources. Techniques and need for in-space sensing are defined.

Earth Mapping (1973; 20 minutes; OC-3) Program No. 15
Evolution of cartography as aided by the space programs and the importance of cartography of the inventory and management of Earth's resources. Includes the economy of providing land-use data from space.

Pollution Detection by Remote Sensing (1973; 20 minutes; OC-3) Program No. 16
Role of aircraft and satellites in locating pollution and its sources. Different types of pollution, sensing methods and types of hardware are defined.

Science From Skylab Series

Introduction (1974; 15 minutes; OC-3) Program No. 1
Brief review of Skylab program including rationale for experiment and science demonstration selection. Covers use of Skylab in demonstrating basic laws of physics. Introduces other programs in this series.

Energy Loss and Angular Momentum (1974; 15 minutes; OC-3) Program No. 2
Provides Earth-related illustrations and on-board Skylab demonstrations which show the law of conservation of angular momentum at work. Terminology is defined and inter-relationship developed.

Magnetism (1974; 15 minutes; OC-3) Program No. 3
Basics of magnetism reviewed by classical demonstrations. The Earth is presented as a magnetic system and Skylab demonstrations show that the magnetic field extends beyond terrestrial boundaries.

- Surface Tension and Capillary Action (1974; 15 minutes; OC-3) Program No. 4
Basic demonstrations are supplemented by Skylab demonstrations that show the principles of surface tension and molecular attraction at work. Skylab was a near-perfect laboratory for these demonstrations.
- Aerodynamics (1974; 15 minutes; OC-3) Program No. 5
The basics of aerodynamics are reviewed emphasizing lift. The Skylab demonstrations show considerations for maintaining controlled and stable flight.
- Elasticity and Spring Oscillation (1974; 15 minutes; OC-3) Program No. 6
Earth-based and Skylab demonstrations related to Hook's Law of Elasticity. The Skylab demonstration shows the complexity of combined stresses in a spring.
- Physiological Adaptations (1974; 15 minutes; OC-3) Program No. 7
A scientist reviews the fish experiment conducted on Skylab in relation to knowledge of fish attained on Earth. Lack of adaptation by adult fish in Skylab and ease of adaptation by hatchlings are shown.
- Artificial Gravity (1974; 15 minutes; OC-3) Program No. 8
Principles of centrifugal and centripetal forces including their potential use for creating artificial gravity in future space applications.
- Optics and Lenses (1974; 15 minutes; OC-3) Program No. 9
Basic lens properties and formation of lenses are explained. The potential for unusual methods of lens formation in space are explored.
- Acoustics (1974; 15 minutes; OC-3) Program No. 10
Sound generation, tone or pitch, method of transmission, design considerations and new ways to put sound to use are covered.
- Principles and Uses of Gyroscopes (1974; 15 minutes OC-3) Program No. 11
The Skylab gyroscope demonstration allows explanation of gyroscopes in readily understandable terms. Common uses of gyroscopes are shown and explained.

Weather and Cloud Formation (1974; 15 minutes;
OC-3)

Program No. 12

Basics of atmospheric composition, cloud formation, condensation and raindrop formation are covered. Relationship of satellites to weather prediction and the need for continued weather observations in prediction are developed.

Space Propulsion (1974; 15 minutes; OC-3)

Program No. 13

Explanation and practical applications of Newton's Laws of Motion are covered. Introduces various types of rocket engines and thrusters.

Solar Astronomy (1974; 15 minutes; OC-3)

Program No. 14

Skylab solar photography and an explanation of solar energy production. Includes explanation of energy movement to the Sun's surface and radiation into space.

Space Processing Techniques (1974; 15 minutes;
OC-3)

Program No. 15

Results of some Skylab experiments on solids melting and resolidification are discussed. Skylab Liquid Floating Zone science demonstration is shown and related to handling and mixing of fluids without containers in space processing applications.

Wave Theory (1974; 15 minutes; OC-3)

Program No. 16

Presents wave theory in terms easily understood. Defines and covers the electromagnetic spectrum. Associates solar observation aboard Skylab with the electromagnetic spectrum.

SKYLAB ON-BOARD TELEVISION

FIRST MANNED MISSION

Identification No.

Specimen Mass Measurement Device and Water Gun (1973) Telecast of the commander demonstrating the operation of the Specimen Mass Measurement Device and the water drink gun. Both of these items were required due to Skylab's zero gravity environment.	TV-1
Preparation for Earth Resources (1973) This telecast shows the crew preparing the Earth Resources equipment to ensure its readiness for an Earth observation pass.	TV-11
M131, Human Vestibular Function (1973) This telecast shows segments of an oculogyral illusion test aboard Skylab.	TV-19
Blood Sampling (1973) Shows the science pilot taking and processing a blood sample from the commander.	TV-4
M092, Lower Body Negative Pressure (1973) Telecast of the science pilot, Dr. Kerwin, performing the lower body negative pressure experiment with the commander, Conrad, as the subject.	TV-6
M171, Metabolic Activity (1973) Using the bicycle ergometer to provide a calibrated work load, scenes of the metabolic activity operation were televised.	TV-9
Additional Lower Body Negative Pressure, M092 (1973) Telecast of one of the astronauts in the lower body negative pressure device where reduced atmospheric pressure causes blood pooling in the legs to simulate normal hydrostatic pressure of the blood.	TV-7
M551, Metals Melting (1973) Behavior of molten metals under Skylab conditions was televised to aid in the study of metals processing in space.	TV-24
M131, Human Vestibular Function (1973) This was the second telecast of this experiment during the first manned Skylab mission. The experiment uses a rotating chair.	TV-20
ED31, Bacteria and Spores (1973) Shows the science pilot performing the inoculation of this student experiment at night and collecting data the following morning.	TV-18

M172, Body Mass Measurement Device (1973) Operation of the equipment used to determine if the bodies of the astronauts have experienced excessive mass (weight) loss.	TV-5
Science Pilot Highlights (1973) The science pilot, Dr. Kerwin, covers highlights of the mission from the scientific point of view. Demonstration of the in-flight medical support equipment was included.	TV-28
Rendezvous (1973) Exterior of Skylab as first Skylab crew completed rendezvous and performed fly-around of damaged space station.	TV-41
Press Conferences (1973) Two separate press conferences by the first Skylab crew. Questions supplied by the press and spontaneous answers by the crew.	TV-27
Meal Preparation (1973) Onboard scenes of the commander preparing dinner during the early part of the first manned Skylab mission.	TV-2
Eating Aboard Skylab (1973) This telecast portrays some differences between dining aboard Skylab and dining on Earth. The commander and the pilot are shown eating their noon meal.	TV-3
Crew Day Off Activities (1973) Shows the ingenuity of astronauts in preventing boredom while in the zero gravity environment of Skylab. Shows "Skylab 500" and Dr. Kerwin performing calisthenics in space.	DOY-152
View From Window (1973) Several scenes taken from the wardroom window in the Orbital Workshop portion of Skylab.	TV-37
Crew Tour No. 1 (1973) This telecast shows the crew quarters in the Orbital Workshop portion of Skylab. Included are the wardroom, waste management and sleep compartments. No audio.	TV-25
Crew Tour No. 2 (1973) Orbital Workshop forward compartment, Airlock Module and Multiple Docking Adapter are shown in this portion of the Skylab tour.	TV-26

	<u>Identification No.</u>
Undock and Flyaround (1973) Views of Skylab by the first crew as they undocked and departed for their return to Earth after a very successful 28 day mission.	TV-42
Zero Gravity Restraints (1973) This telecast shows a demonstration of sleep restraints and triangle shoes used on Skylab. It also shows the Skylab shower and trash airlock.	TV-15
Parasol Deployment (1973) Shows deployment of the thermal shield through the solar scientific airlock in the Orbital Workshop.	DOY-147A
Orbital Workshop Checkout (1973) Coverage of the crew activities during activation using a fixed television camera in the Orbital Workshop dome area.	DOY-147B
Tape Reloading (1973) Removal and replacement of magnetic tape in the Earth Resources tape recorder.	TV-12
Apollo Telescope Mount Operation (1973) Coverage of the Commander, Conrad, operating the control and display console during solar observation from Skylab.	TV-13
Extravehicular Activities Simulation (1973) During two passes over the continental United States, coverage of the crew preparing for EVA on the following day was provided by live telecast.	DOY-157
Solar Array Release EVA (1973) Coverage of the extravehicular activity crewmen taken by the pilot through an Airlock Module structural transition section window. A corner of the parasol thermal shield is visible.	DOY-158
Earth Television Coverage (1973) A camera was attached to the viewfinder tracking telescope of the Earth Resources equipment to provide high resolution coverage of the Earth during an Earth observation pass.	TV-29

	<u>Identification No.</u>
EVA, Film Change (1973) Crew performance of extravehicular activities during retrieval of exposed solar film from the Apollo Telescope Mount. This activity also included film replacement.	TV-43
 <u>SECOND MANNED MISSION</u>	
Crew Eating (1973) Live pictures of noon meal before the crew had fully adapted to zero gravity.	TV-3
Meal Preparation (1973) Preparation of the next meal on Mission Day 26.	TV-2
Personal Hygiene Demonstration (1973) Allows the viewer to compare personal hygiene conducted on Earth with space-oriented personal hygiene.	TV-16
Spacecraft Tour (1973) Telecast shows the crew quarters area in the Orbital Workshop.	TV-25
Spacecraft Tour Continued (1973) Covers Orbital Workshop forward compartment Airlock Module and Multiple Docking Adapter.	TV-26
Press Conference (1973) Second Skylab crew provides spontaneous answers to questions from the press.	TV-27
Earth Television Coverage (1973) Telecast is in two parts. The first part shows North Africa, Gibraltar, the Mediterranean, Italy, and a volcano in Sardinia. The second part shows Spain and France.	TV-29
Rendezvous (1973) Black and white coverage of Skylab as the second crew approaches for docking.	TV-41
Crew Exercise (1973) Telecast is in three parts. Shows crew exercising techniques using two different types of exercise equipment plus arm pedaling on the bicycle ergometer.	TV-61

	<u>Identification No.</u>
Medical Experiment Area (1973) Shows crew activities in the medical experiment area of the Orbital Workshop.	DOY-214
Tropical Storm Brenda (1973) Two separate telecasts showing out of the window television views of the storm.	DOY-230 DOY-231
Crew Day Off (1973) Crew day off activities, including shower, haircut, and gymnastics.	DOY-230
Tropical Storm Christine (1973) Clouds in the area of the tropical depression over the Atlantic Ocean about midway between South America and South Africa. Three separate telecasts.	DOY-241 DOY-242 DOY-243
Tropical Storm Delia (1973) Three separate telecasts of this storm over the Gulf of Mexico. In the two DOY-247 telecasts, the landfall at Galveston, Texas is shown.	DOY-246 DOY-247
Dart Throwing (1973) Two telecasts. Both show crewmen throwing darts in the Skylab environment, but in the second the crewmen have modified the dart fins for better operation in zero gravity and low atmospheric pressure.	DOY-259 DOY-261
Drought Area (1973) African drought area as it appeared from Skylab window.	DOY-253
Specimen Mass Measurement Device and Water Gun (1973) Operation of the Specimen Mass Measurement Device and the water drink gun. Both of these items were required due to Skylab's zero gravity environment.	TV-1
M110, Blood Sampling (1973) Shows blood removal followed by hemoglobin tests.	TV-4
M172, Body Mass Measurement Device (1973) Operation of the equipment used to determine if the bodies of the astronauts have experienced excessive mass (weight) loss.	TV-5

Identification No.

M092, Lower Body Negative Pressure (1973)	TV-7	
M092 was divided into two telecasts with part 2 to be performed first. Part 1 was deleted because of a camera failure.		
M093, Vectorcardiogram (1973)	TV-8	
Telecast shows data being taken for the ninth time during the second manned mission. The bicycle ergometer was used.		
M171, Metabolic Activity (1973)	TV-9	
Using the bicycle ergometer to provide a calibrated work load, scenes of the metabolic activity operation were televised.		
M131, Rotating Litter Chair (1973)	TV-19	
Three separate telecasts of this experiment.		
Investigations were oculogyral illusion (TV-19),		TV-20
motion sensitivity (TV-20), and spatial localization (TV-21).		TV-21
Science Pilot Highlights (1973)	TV-28	
Dr. Garriott provides solar physics highlights from the first part of the second manned mission.		
ED74 Mass Measurement (1973)	TV-45	
Telecast of this student experiment shows four mass determinations using a cantilevered spring beam device.		
S063, UV Airglow Horizon Photography (1973)	TV-46	
This telecast provided data on the ultraviolet horizon airglow as viewed from Skylab.		
S019, UV Stellar Astronomy (1973)	TV-47	
Operation of the ultraviolet astronomy experiment from the anti-solar scientific airlock in the Orbital Workshop.		
Angular Momentum (1973)	TV-51	
Science demonstration showing the conservation of angular momentum and energy loss.		
Large Water Drops (1973)	TV-53	
One science demonstration in a four-part series. Shows effects of surface tension.		

Identification No.

Fish Eggs and Hatchlings (1973) Another in a series of four science demonstrations. Shows fish eggs and hatchlings in Skylab environment.	TV-53
Minnows (1973) This science demonstration in the four-part series shows minnow fingerlings swimming in a water bag aboard Skylab. Two telecasts were made.	TV-53
Wilburforce Pendulum (1973) The last in the series of four, this science demonstration shows the odd effects of spring action in zero gravity.	TV-53
Magnetic Effects (1973) Two separate telecasts show that the Earth's magnetic field influences this science demonstration aboard Skylab.	TV-54
Paper Airplane (1973) Two separate science demonstrations aboard Skylab show aerodynamic effects in zero gravity.	TV-55
ED32, Invitro Immunology (1973) Shows inoculation of immunodiffusion plates with antigen and the start of incubation for this student experiment.	TV-58
ED52, Web Formation (1973) Five separate telecasts of this student experiment show how well cross spiders adapted to the environment aboard Skylab.	TV-59
ED63, Cytoplasmic Streaming (1973) Television coverage was provided for this student experiment, but plants were dead.	TV-60
ED78, Liquid Motion (1973) Two telecasts provided different versions of this student experiment designed to evaluate the motion of liquids in the Skylab environment.	DOY-244 DOY-248
Achilles Tendon (1973) Shows testing of achilles tendon reflexes on each of the three crewmen.	DOY-242

	<u>Identification No.</u>
Eye, Ear, Nose and Throat Examination (1973)	DOY-259
<p>Televised medical examination of all three crewmen.</p>	
T013, Crew/Vehicle Disturbances (1973)	TV-10
<p>Vehicle disturbances resulting from crew activities were measured to provide correlation for design of future spacecraft control systems.</p>	
Tape Reloading (1973)	TV-12
<p>Removal and replacement of magnetic tape in the Earth Resources tape recorder.</p>	
Apollo Telescope Mount Operation (1973)	TV-13
<p>Coverage of operation of the control and display console during solar observation from Skylab.</p>	
Extravehicular activities (1973)	TV-43
<p>Two separate telecasts. The first shows some activities outside the spacecraft required for deployment of the twin-pole thermal shield. The second shows crew activities related to installation of the gyro six-pack used in control of Skylab attitudes.</p>	
T020, Foot Controlled Maneuvering Unit (1973)	TV-57
<p>Three separate telecasts. All show operation of this type astronaut maneuvering unit, a predecessor to maneuvering units that may have future use in space. Operations were conducted in shirtsleeves and in space suits.</p>	
Mass Measurement Device Repair (1973)	TV-62
<p>Shows replacement of the electronic portion of the small mass measurement device.</p>	
Television Camera Test (1973)	TV-63
<p>Both television cameras were tested to ensure proper video operation.</p>	

Identification No.

M509, Astronaut Maneuvering Equipment (1973)

TV-36
DOY-229
DOY-239

Operation of this type maneuvering equipment in three telecasts. One shows operation with the astronaut in shirtsleeves, one with the astronaut in a space suit and the other shows special tests to demonstrate precision and flexibility of the maneuvering backpack.

Skylab 3 Crew Debriefing (1973)

DOY-251
DOY-252
DOY-253

Three part telecast by the second Skylab crew to provide the third Skylab crew with pertinent technical information to aid them during their mission.

Earth Resources (1973)

TV-11

Two telecasts. Both show the crew preparing the Earth Resources equipment to ensure its readiness for an Earth observation pass. The first telecast shows a view of Chicago and Lake Michigan through the S190A window and the crew performing an Earth Resources pass.

Television System Troubleshooting (1973)

DOY-216

Telecast shows the Apollo Telescope Mount control and display panel which provided a visual aid in troubleshooting the onboard video tape recorder.

Earth Resources Camera (1973)

DOY-217

Telecast of Earth terrain camera operations from the anti-solar scientific airlock in the Orbital Workshop.

Television System Verification (1973)

DOY-219

Telecast of the Apollo Telescope Mount control and display panel and M092, lower body negative pressure device, as a verification of successful replacement of the onboard video tape recorder.

Tape Recorder Maintenance (1973)

DOY-227

Telecast shows disassembly and troubleshooting of the Airlock Module data and voice tape recorder.

Experiment Package Jettison (1973)

DOY-216

Jettisoning the defective T027/S073 boom out of the anti-solar scientific airlock.

Earth Resources (1973)	TV-11
Two telecasts. Both show the crew preparing the Earth Resources equipment to ensure its readiness for an Earth observation pass. The first telecast shows a view of Chicago and Lake Michigan through the S190A window and the crew performing an Earth Resources pass.	
Television System Troubleshooting (1973)	DOY-216
Telecast shows the Apollo Telescope Mount control and display panel which provided a visual aid in troubleshooting the onboard video tape recorder.	
Earth Resources Camera (1973)	DOY-217
Telecast of Earth terrain camera operations from the anti-solar scientific airlock in the Orbital Workshop.	
Television System Verification (1973)	DOY-219
Telecast of the Apollo Telescope Mount control and display panel and M092, lower body negative pressure device, as a verification of successful replacement of the onboard video tape recorder.	
Tape Recorder Maintenance (1973)	DOY-227
Telecast shows disassembly and troubleshooting of the Airlock Module data and voice tape recorder.	
Experiment Package Jettison (1973)	DOY-216
Jettisoning the defective T027/S073 boom out of the anti-solar scientific airlock.	
S183, UV Stellar Panorama (1973)	TV-23
Telecast shows the installation of the ultra-violet panorama experiment in the anti-solar scientific airlock.	
 <u>THIRD MANNED MISSION</u>	
Eating (1973)	TV-3
Two separate telecasts, days 330 and 332	TV-3A
Personal Hygiene Demonstration (1973)	TV-16
Demonstration on Day 347	
Press Conferences (1974)	TV-27
Two conferences, held on Days 2 and 31	

	<u>Identification No.</u>
Viewfinder Tracking System (1973) Views of South Africa.	TV-29
Out of Window (1973) Mississippi Delta during Earth observation pass.	TV-32
General Purpose Intravehicular Activity (1973 & 1974) Seven-part telecast. The first part, on Day 331, shows the pilot exercising on the treadmill. Three telecasts focus on the various instruments used aboard Skylab for study of the Kohoutek Comet on Days 354, 365 and 1. Two telecasts show sketches of the comet as it appeared from Skylab on Days 4 and 6. A discussion of the Earth observation instruments was held on Day 25.	TV-77
Earth Surface Features (1973 & 1974) This eleven-part telecast provides the following views: 1) Faikland Currents, 2) Faikland/South Equatorial Currents, 3) Aleutian Islands, 4) California and Baja, 5) Japan and Alaska, 6) Aleutian Islands, 7) California and Baja, 8) Galapagos Islands, 9) Mouth of the Amazon, 10) California and Baja, and 11) Andes and Santiago, Chile.	TV-78 Parts 1 thru 11
Crew Day Off Activities (1973 & 1974) Nine separate telecasts that include: 1) air swimming and pilot in shower; 2) space suit donning demonstration; 3) removal of foot restraints at wardroom table; 4) Christmas special; 5) space suit with the name S. Claus; 6 and 7) sketches of the Kohoutek Comet; 8) discussion of water blob, and 9) completion of human body momentum demonstration (Part of TV-87)	TV-81
M110, Blood Sampling (1973) Day 340	TV-4
M092, Lower Body Negative Pressure (1974) OC-3)	TV-6
S183 Ultraviolet Panorama (1973) Comet observations on Day 334	TV-23

	<u>Identification No.</u>
Professor Kohoutek Conference (1973) Live conference relative to comet on Day 362.	TV-27
Science Pilot Highlights (1973) Discussion of Apollo Telescope Mount procedures and techniques on Day 338	TV-28
Water Sampling (1973) Conducted on Day 337.	TV-33
S019, Ultraviolet Stellar Astronomy (1973) Conducted on Day 348.	TV-47
M479, Zero Gravity Flammability (1974) Conducted on Day 35.	TV-66
ED41, Motor Sensor Performance (1974) Day 32.	TV-67
ED61/62 Plant Growth/Plant Phototropism (1973) The first telecast shows preparations for the experiment and the second shows experiment data gathering operations.	TV-68 TV-69
Human Body Momentum (1974) Science demonstration in two parts. The second part was completed as a crew day off activity.	TV-81
Liquid Floating Zone (1974) Science demonstration televised in five parts on five consecutive days.	TV-101-1 thru TV-101-5
Liquid Films (1974) Science demonstration on Day 24.	TV-103
Gyroscope (1974) Two part science demonstration of gyroscopic action telecast on Days 9 and 26.	TV-104
Immiscible Liquids (1974) Science demonstration conducted on Day 3.	TV-102
Fluid Mechanics (1974) Science demonstration in five parts (Days 4, 5, 18, 23, and 24)	TV-107-1 thru TV-107-5

	<u>Identification No.</u>
Orbital Mechanics (1974) Science demonstration conducted on Day 21.	TV-110
Gypsy Moth (1973) Telecast showing larvae hatched in Skylab (Day 352).	TV-120
M509, Astronaut Maneuvering Equipment (1973 & 1974) Three separate telecasts. The commander is shown in two telecasts, both in shirtsleeves and suited. The science pilot is suited in the other.	TV-36
T020, Foot Controlled Maneuvering Unit (1974) Two telecasts. Days 15 and 24.	TV-57
Activation, Multiple Docking Adapter (1973)	TV-64
Coolant Servicing (1973) Crew operations during servicing of the Airlock Module coolanol system on Day 323.	TV-72
Air Mixing Screen Cleaning (1973) Shows the crew cleaning the screen located in the Orbital Workshop (Day 335).	TV-65
S192 Alignment (1973) Telecast of crew performing alignment procedures for one of the Earth observation sensors (Day 329).	TV-83
S054 Film Canister Reloading (1973) Telecast of the crew reloading a film canister for one of the Apollo Telescope Mount solar telescopes (Day 332).	TV-XX

16mm FILM

Headquarters

Skylab (1972; 27 minutes) HQ-216

NASA's first manned space laboratory - SKYLAB.

Three 3-man crews live and work in this laboratory for periods up to 56 days. The film, produced before the mission, shows the major objectives, its principal components, and features the four launches involved, and a few of the scientific investigations that were performed which illustrate their type and scope.

Marshall Space Flight Center

Skylab - silent footage (1974; 13 minutes)

General Skylab concepts. Developed for group presentations, narration to be given by a speaker. Script available with film.

Skylab: The Search and the Hope (1974; 23 minutes) MSFC-74-350

A comprehensive film that covers the scientific achievements of Skylab - studies of the Earth, the Sun, space technology, and even man himself. The relevance of the Skylab program is emphasized throughout. The film is suitable for general audiences as well as technically oriented viewers.

Skylab Mission Made Possible (1974; 20 minutes) MSFC-74-369

A complete chronology of the problem and repair of the Skylab space station during its first six weeks. The film provides an interesting in-depth story of the behind-the-scenes activities of NASA and its industry team to save the stranded space station.

Skylab: The First Mission (1973; 25 minutes) MSFC-73-370

Skylab: The Second Journey (1974; 25 minutes) MSFC-74-403

Skylab: The Third Mission (1974; 13 1/2 minutes) MSFC 74-413

Skylab: High School in Space (1974; 13 1/2 minutes) MSFC-74-418

A film that depicts the involvement of education and space. Features the Skylab student experiments and science demonstrations.

The Manned Spacecraft Center - Where Tomorrow Begins
(1972; 30 minutes) MSC-532

Depicts the role of the NASA Manned Spacecraft Center in the nation's space flight programs from Mercury, Gemini, and Apollo through Skylab and programs of the future. The audience is given a tour through engineering and scientific facilities at the MSC and an insight into subjects such as astronaut training, engineering and development, and mission operation and control. The MSC aircraft and Earth resource programs are also demonstrated as presently carried on and as planned, using tomorrow's technologically advanced capabilities.

Space in the 70's - Man in Space: The Second Decade
(1971; 28 minutes) MSC-556

Previews benefits to mankind resulting from U. S. space flights, including Apollo 8 (December 1968), the first Moon orbital mission, and Apollo 11 (July 1969), the historic goal of landing man on the Moon. Apollo 11 collected the first of many rock and soil samples and set up the first of many planned scientific stations. Future programs include Skylab, reusable Space Shuttle, an orbiting Space Station, and, eventually, manned expeditions to other planets.

Manned Space Flight - New Goals - New Challenges
(1970; 19 minutes) MSC-538R

Shows where we stand today in manned space flight and where we will be in the near future if present capability is applied to such imminent developments as Skylab, space stations, space shuttles, further lunar exploration, and future planetary missions.

Skylab - On the Eve of Launch (1973; 11 minutes)
JSC-604

Expresses the continuity of the United States space program, describes Skylab and its flight plans, highlights the final preparation of flight articles and crew training up to the eve of launch of the first mission, and presents a short review of representative experiments and their possibilities for the benefit of mankind.

Skylab (1972; 28 minutes) MSC-569

Describes Skylab and its three 3-man missions scheduled for 1973. Gives examples of the 50 or more scientific experiments and investigations directed by some of the world's leading scientists. The four broad categories are biomedical, solar and stellar astronomy, materials processing, and Earth resources surveys and sensor development.

Skylab Medical Experiments (1973; 31 minutes) JSC-590
Describes the equipment and experiments of the Skylab Medical Experiments Program. Discusses major experiment items such as the lower body negative pressure device, the ergometer, the rotating litter chair, and the experiment support system. Covers blood studies, microbiological studies, and emergency medical gear. Furnishes a brief look at the food program. The film is aimed at audiences with some technical expertise.

Apollo Applications (1967; 26 minutes) MSC-356
Presents the Apollo Applications Program as envisioned in early 1967 with potential benefits from Apollo hardware. Interviews with Dr. Charles Tawnes, Dr. Charles Berry, Astronaut James Lovell, Dr. Lloyd Berknes, Dr. Eugene Shoemaker, Dr. James Arnold, and Dr. Leo Goldberg.

Skylab - The Second Manned Mission - A Scientific Harvest (1974; 36-1/2 minutes) JSC-627
Covers the Skylab launch activities and docking with unmanned SL-1 workshop. Includes observations of student experiments - the Mummichogs minnows and Arabella the spider; crew medical experiments and exercise routines, and the enabling of the Earth Resources Experiments Package. Shows planet Earth documentation, manned operation of the Apollo Telescope Mount for observations of the Sun and beyond, outside EVA activity, testing of the Astronaut Maneuvering Unit, experiments to explore industrial uses of space, and the Skylab living routine.

Skylab - The First 40 Days (1973; 25 minutes) JSC-623
Records the launch of unmanned Skylab on May 14, 1973, and the major problem resulting from the loss of the meteoroid heat shield. Shows the fabrication of materials and the equipment used in the repair operation, followed by the installation of the parasol after the launch and docking of the manned SL-2 with the SL-1 workshop. Includes on-board sequences of daily work routines and some of the experiments.

Skylab - The Problem - The Fix (1973; 10 minutes) JSC-622
Illustrates the fabrication of the materials and equipment used to repair SL-1 and includes onboard film which shows the EVA operations in connection with the repairs.

EREP (1973; 3 minutes) JSC-613

Shows the Earth Resources Experiments Package to be flown aboard Skylab and scan the Earth in a number of spectrums. Includes photos taken in regular light and infrared from orbiting Apollo and Gemini spacecraft to give some idea of what will be seen through EREP.

Skylab - Youth Accepts the Challenge of Space (1973; 31 minutes) JSC-620

NASA reached out beyond the astronauts, engineers, and professional scientists to directly involve the youth of the nation in the Skylab project. From the 3,409 proposals submitted by high school students, the 19 to be conducted during the Skylab mission are described.

Skylab - Earth and Sun Observations (1973; 25 minutes) JSC-621

Describes special equipment aboard Skylab to provide a vast amount of new information about the land, sea, and atmosphere. A cluster of telescopes will observe and photograph the Sun as never before seen by man, clear of Earth's atmosphere.

Skylab - An Investigation in Space (1973; 22 minutes) JSC-625

Describes the four modules that comprise Skylab, the scientific laboratory. Also describes living and working conditions, including food, housekeeping, devices for dealing with weightlessness, and many other factors involved in the experiments.

Skylab - Space Science Experiments (1973; 23 minutes) JSC-626

The primary objective of Skylab is to conduct scientific investigations in the areas of biomedical sciences, solar physics, Earth resources, crew operations, astrophysics, and space technology. This film describes six of the approximately 90 experiments performed, five of which involve space photography and the sixth collects impressions of flying micro-meteorites.

Skylab - America's First Space Station (1974; 60 minutes) JSC-650

An interesting collection of space film molded into a complete story of Skylab, its problems, its crews, and its scientific achievements.

Skylab Experiment Films

These are single concept films of individual Skylab experiments. Generally, each shows the principal investigator for the experiment "on camera" in sync sound explaining his experiment in terms of how it works and the results he hopes to achieve.

Johnson Space Center (JSC) Experiment Films

M073 - Bioassay of Body Fluids (1973; 6-1/2 minutes)
JSC-596

Dr. Carolyn Leach - Principal Investigator, NASA Johnson Space Center, Houston. Evaluation of blood and urine for endocrinological studies of zero-G environment.

M171 - Metabolic Activity (1973; 4 minutes) JSC-597
Edward L. Michel and John A. Runnel, Ph.D. - Principal Investigators, NASA Johnson Space Center, Houston. Determination of effectiveness of human muscular activity in weightless environment.

M133 - Sleep Monitoring (1973; 13 minutes) JSC-598
James D. Frost, Jr., M.D. - Principal Investigator, Baylor University, Houston. Evaluation of sleep quantity and quality in zero-G environment.

M092 - Lower Body Negative Pressure (1973; 4:13 minutes)
JSC-599

Robert L. Johnson, M.D. - Principal Investigator, NASA Johnson Space Center, Houston. Determination of cardiovascular conditioning and adaptation to a weightless environment.

S193 & S194 - Microwave Measurements of Earth (1973; 4-1/2 minutes) JSC-600

Dallas E. Evans - Project Scientist, NASA Johnson Space Center, Houston. Experiment S193 provides parameters for the design of radar altimeters; experiment S194 provides backup for S193 and provides data on brightness temperature and surface reflectivity of the Earth's surface.

S019 - Ultraviolet Stellar Astronomy (1973; 11 minutes)
JSC-601

Dr. Karl G. Henize - Scientist/Astronaut, NASA Johnson Space Center, Houston. Recording of ultraviolet spectra lines from milky way stars and provides data for use in the design of satellite observatories.

M509 - Astronaut Maneuvering Unit (1973; 6-1/2 minutes)
JSC-607

Major Ed Whitsett - Principal Investigator, U. S. Air Force, Los Angeles. Determination of in-orbit usefulness of various maneuvering techniques designed to assist astronauts during EVA activity.

M071 - Mineral Balance (1973; 4-1/2 minutes) JSC-609
G. Donald Whedon, M.D. - Principal Investigator, National Institute of Health, Washington. Determination of effects of space flight on muscle and skeletal body systems by gain/loss assessment of biochemical constituents.

M093 - Vectorcardiogram (1973; 2 minutes) JSC-610
Raphael Smith, M.D. - Principal Investigator, U.S. Aerospace Medical Institute, Pensacola. Determination of heart changes in weightless environment.

M074 & M172 - Specimen Mass Measurement - Body Mass Measurement (1973; 8-1/2 minutes) JSC-612
Dr. William Thornton - Scientist/Astronaut, NASA Johnson Space Center, Houston. Demonstrated use of body mass measurement device and support medical experiments requiring use of mass measurement device.

S191 - Infrared Spectrometer (1973; 2:43 minutes)
JSC-614
Thomas L. Barnett, Ph.D. - Project Scientist, NASA Johnson Space Center, Houston. Magnetic data recording using multispectral infrared scanning device that scans the Earth's surface along vehicle track.

S109 - Multispectral Photography (1973; 3-1/2 minutes)
JSC-615
Ken Demel - Project Scientist, NASA Johnson Space Center, Houston. Multispectral photography of Earth features in six visible and infrared bandwidths.

S063 - Ultraviolet-Airglow Horizon Photography (1973; 4-1/2 minutes) JSC-617
Donald M. Packer - Principal Investigator, Naval Research Laboratory, Washington. Photography of the night airglow and daytime ozone layer of the Earth's atmosphere.

Skylab Food Management (1973; 6-1/2 minutes) JSC-619
Malcolm C. Smith, Jr., D.V.M. - Principal Investigator, Food and Nutrition Branch, NASA Johnson Space Center, Houston. Food planning to meet varied requirements of long duration space flight.

Skylab Recreational Activities (1973; 4 minutes) JSC-616
Larry Bell, Crew Systems Division, NASA Johnson Space Center, Houston. Description of items carried onboard to fulfill recreational needs of manned crews.

Marshall Space Flight Center (MSFC) Experiment Films

D024 - Thermal Control Coatings MSFC-73-352

Dr. William L. Lehn - Principal Investigator, Wright-Patterson Air Force Base, Ohio. Evaluation of thermal control coatings having long term exposure to space.

M415 - Thermal Control Coatings MSFC-73-362

Eugene C. McKannon - Principal Investigator, NASA Marshall Space Flight Center, Huntsville. Evaluation of thermal control coatings exposed to launch and space environments.

T002 - Manual Navigation Sightings MSFC-73-356

Robert J. Randle, NASA Ames Research Center; and Major Stanley Powers, USAF, co-investigators. Study effects of extended periods of space travel upon navigation sightings ability.

T003 - In-Flight Experiment Aerosol Analysis MSFC-74-373

Dr. William Z. Leavitt - Principal Investigator, Department of Transportation. Measurement of size, concentration and composition of atmospheric particles inside Skylab.

T013 - Crew/Vehicle Disturbances MSFC-74-374

Bruce A. Conway - Principal Investigator, NASA Langley Research Center. Measurement of crew movement effects on the dynamics of manned spacecraft.

T020 - Foot-Controlled Maneuvering Unit MSFC-73-365

Donald E. Hewes - Principal Investigator, NASA Langley Research Center. Evaluation of an astronaut maneuvering device not requiring use of the astronaut hands.

T027 - Contamination Measurements MSFC-73-357

Joseph A. Muscari, Ph. D. - Principal Investigator, Martin-Marietta Aerospace. Determine degradation effects of external contamination upon windows, mirrors and diffraction gratings, as well as to measure brightness and polarization of scattered sunlight.

- S052 - White Light Coronagraph MSFC-74-378
 Dr. Robert MacQueen - Principal Investigator, High Altitude Observatory, Boulder. Photography of solar corona in visible light out to 3 million miles (6 solar radii).
- S054 - X-Ray Spectrographic Telescope MSFC-74-380
 Dr. Riccardo Giacconi - Principal Investigator, American Science and Engineering. X-Ray photography of flares and active regions for determining corona temperatures and energetic particle densities.
- S055A - Ultraviolet Scanning Polychromator MSFC-74-376
 Dr. E.M. Reeves - Principal Investigator, Harvard College Observatory. Observation of temporal changes in ultraviolet radiation emitted by various solar regions.
- S056 - X-Ray Telescope MSFC-74-375
 James E. Milligan - Principal Investigator, NASA Marshall Space Flight Center. Collection of x-ray radiation data on physical processes occurring within the solar atmosphere.
- S082A - Extreme Ultraviolet Spectroheliograph MSFC-74-382
 Dr. Richard Tousey - Principal Investigator, Naval Research Laboratory. Sequential Photography of the solar disk shows emission features enhanced over white light photographs.
- S082B - Spectrograph and Extreme Ultraviolet Monitor MSFC-74-379
 Dr. Richard Tousey - Principal Investigator, Naval Research Laboratory. Sequential photography of the solar disk shows emission features enhanced over white light photographs.
- S009 - Nuclear Emulsion MSFC-73-353
 Maurice M. Shapiro, Ph. D. - Principal Investigator, Naval Research Laboratory. Recording cosmic ray flux outside earth's atmosphere.
- S073 - Gegenschein/Zodiacal Light MSFC-73-354
 J.L. Weinberg, Ph. D. - Principal Investigator, Dudley Observatory, Albany. Measurement of brightness and polarization of the sky's visible background as seen from above the earth's atmosphere.

- S150 - Galactic X-Ray Mapping MSFC-73-360
William Kraushaar, Ph. D. - Principal Investigator,
University of Wisconsin. Survey of the sky for
faint x-ray sources.
- S183 - Ultraviolet Panorama MSFC-73-363
Dr. George Courtes - Principal Investigator, Laboratoire
d'Astronomie Spatiale du CRNS, Marseille, France.
Ultraviolet measurement of stars.
- S228 - Trans-Uranic Cosmic Rays MSFC-74-377
Dr. P. Buford Price - Principal Investigator,
University of California, Berkley. Identify
trans-uranic nuclei and determine abundance
of nuclei with an atomic map number greater
than 26.
- S230 - Magnetospheric Particle Composition MSFC-73-355
Dr. Don Lind, NASA Johnson Space Center, and Dr.
Johannes Geiss, University of Bern, Switzerland,
co-investigators. Measurement of the abundance of
heavy, rare ions in the earth's magnetosphere
for comparison with Apollo's solar wind composition
experiment.
- M512 - Materials Processing Facility MSFC-73-363
P. Gordon Parks - Principal Investigator, NASA
Marshall Space Flight Center. Evaluation of
molten metal phenomena for manufacturing in a
zero g environment.
- M479 - Zero Gravity Flammability MSFC-73-366
J.H. Kinzey - Principal Investigator, NASA
Johnson Space Center. Determination of flame
propagation, flashover and extinguishment.
- M518 - Multipurpose Electric Furnace MSFC-73-361
An apparatus for experiments involving phase changes
at elevated temperatures (solidification, crystal
growth, etc.)
- Proton Spectrometer MSFC-73-359
George Detko - Principal Investigator, NASA
Marshall Space Flight Center. Determination
of the energy spectrum and intensity of
electrons and protons in radiation belts.
- ED11 - Atmospheric Heat Absorption MSFC-74-383
Joe. B. Zmolek - Student Investigator, Lourdes
High School, Oshkosh, Wisconsin. Determination
of atmospheric attenuation of radiant energy in
the visible and near infrared regions by using infor-
mation from Skylab's sensors.

ED12 - Volcanic Study MSFC-74-384

Troy A. Crites - Student Investigator, Kent Junior High School, Kent, Washington. Feasibility study of predicting volcanic activity from Skylab's infrared sensors.

ED21 - Libration Clouds MSFC-74-407

Alison Hopfield - Student Investigator, Princeton Day School, Princeton, New Jersey. Observation of two zero-force regions between the Earth and Moon where small particles may have accumulated.

ED22 - Objects Within Mercury's Orbit MSFC-74-385

Daniel C. Bochsler - Student Investigator
Silverton Union High School, Silverton, Oregon.
Identification of planetary objects which may orbit the sun at a radius substantially less than that of Mercury's orbit.

ED23 - UV From Quasars MSFC-74-408

John C. Hamilton - Student Investigator, Aiea, Hawaii. Ultraviolet photograph analysis to augment existing quasar data in radio and visible ranges.

ED24 - X-Ray Stellar Classes MSFC-74-386

Joe W. Reihs - Student Investigator, Tara High School, Baton Rouge, Louisiana. X-ray observations of celestial regions for relating x-ray emissions to other spectral characteristics of observed stars

ED25 - X-Rays From Jupiter MSFC-74-387

Jeanne L. Leventhal - Student Investigator, Berkeley, California. Correlation of x-ray emission from Jupiter with solar activity and decametric radio emission.

ED26 - UV From Pulsars MSFC-74-388

Neal W. Shannon - Student Investigator, Fernbank Science Center, Atlanta, Georgia. Measurement of ultraviolet radiation from known pulsars for correlation with existing pulsar spectral data.

ED31 - Bacteria and Spores MSFC-74-389

Robert L. Staehle - Student Investigator, Harley School, Rochester, New York. Study of Skylab bacteria growth for comparison with earth grown bacteria.

- ED32 - In Vitro Immunology MSFC-74-390
Todd A Meister - Student Investigator, Bronx
High School of Science, Jackson Heights, New
York. Determination of zero g effect upon the immune-
response mechanism.
- ED33 - Microorganisms in Varying G MSFC-74-391
Keith Stein - Student Investigator, W. Tresper
Clark High School, Westbury, New York. An effects
study of various artificial gravity levels upon
microorganisms.
- ED41 - Motor Sensory Performance MSFC-74-392
Kathy L. Jackson - Student Investigator, Clear Creek
High School, Houston, Texas. Measurement of changes
in fine, manipulative capabilities of a crew member
experiencing extended space conditions.
- ED51 - Chick Embryology MSFC-74-409
Kent Brandt - Student Investigator, Grand Blanc
Senior High School, Grand Blanc, Michigan. A high
life form investigation of chicken eggs, studying
various stages of embryos in a space environment,
as well as studying post-flight motor sensory
performance.
- ED52 - Web Formation MSFC-74-393
Judith S. Miles - Student Investigator, Lexington,
Massachusetts. Observation of a spider's web build-
ing process and structure in a space environment.
- ED61 - Plant Growth MSFC-74-394
Joel G. Wordekemper - Student Investigator, Central
Catholic High School, West Point, Nebraska. A study
of zero g effects upon geotropism which was run
concurrently with ED62.
- ED62 - Plant Phototropism MSFC-74-395
Donald W. Schlack - Student Investigator, Downey,
California. A study of substituting lights for
gravity to effect proper plant growth.
- ED63 - Cytoplasmic Streaming MSFC-74-396
Cheryl A. Peltz - Student Investigator, Arapahoe
High School, Littleton, Colorado. Microscopic
observation of a plant's leaf cell for intra-
cellular cytoplasmic motion.
- ED71 - Colloidal State MSFC-74-397
Keith McGee - Student Investigator, South Garland
High School, Garland, Texas. Determination of zero
gravity effect upon the colloidal state of matter.

ED72 - Capillary Study MSFC-74-398

Roger G. Johnston - Student Investigator, Ramsey High School, St. Paul, Minnesota. Observation of capillary and wicking action in zero gravity conditions.

ED73 - Power Flow MSFC-74-410

Kirk Sherhart - Student Investigator, Berkley, Michigan. A feasibility study for using powdered solids in place of liquids in zero gravity.

ED74 - Mass Measurement MSFC-74-411

Vincent W. Converse - Student Investigator, Harlem High School, Rockford, Illinois. Oscillation frequency of a pendulum is measured to determine mass.

ED75 - Brownian Motion MSFC-74-399

Gregory Merkel - Student Investigator, Wilbraham and Monson Academy, Springfield, Massachusetts. Evaluation of Brownian motion in zero g (molecular movement in suspensions).

ED76 - Neutron Analysis MSFC-74-400

Terry C. Quist - Student Investigator, Thomas Jefferson High School, San Antonio, Texas. Low energy neutrons impact detectors and leave a path for microscopic identification.

ED77 - Universal Gravity MSFC-74-401

James Healy - Student Investigator, St. Anthony's High School, Bayport, New York. A modified Cavendish balance for measurement of mass attraction of two dissimilar size spheres.

ED78 - Liquid Motion in Zero G MSFC-74-402

W. Brian Dunalp - Student Investigator, Austintown Fitch High School, Youngstown, Ohio. Motion study of liquid-gas interface (bubble in a liquid) subjected to impulsive forces.

PHOTOGRAPHS

1. Space Photography, 1974 Index
Listing of photographs taken
from space including selected
Skylab pictures
Booklet-1974; 152 pages; available from:
Audio Visual Branch
Public Information Division
Code FP
National Aeronautics & Space Administration
Washington, D.C. 20546
2. Earth Resources Photography
EROS Data Center
10th & Dakota Avenue
Sioux Falls, South Dakota 57198
3. General Skylab Mission Photography
General mission photography:
Space Photographs
P. O. Box 486
Bladensburg, Maryland 20710
4. Solar Skylab Photography
Solar experiments data and photography:
X-ray/UX Solar Photography Experiment
S020, Coronal Spectroheliograph S082A
and Chromospheric Spectrograph S082B
U. S. Naval Research Laboratory
Washington, D.C. 20390

White Light Coronagraph S052
High Altitude Observatory
Boulder, Colorado 80302

X-ray Spectrographic Telescope S054
American Science and Engineering
955 Massachusetts Avenue
Cambridge, Massachusetts 02139

H-Alpha Telescopes, UV Scanning Poly-
chromator S055A
Harvard College Observatory
60 Garden Street
Cambridge, Massachusetts 02138

X-ray Telescope S056
Marshall Space Flight Center
Huntsville, Alabama 35812

EXHIBITS

Skylab Model (OC-2) (OC-3, reference 76697, 76652, 76601)

A 1:20 scale model of Skylab in which the workshop portion has been cut away to show the bi-level workshop interior. Two information panels (optional) are frequently included with the exhibit model. The panels (to be displayed on easels) give descriptive information and photographs of the Skylab mission and its program objectives.

Data:

Type

Indoor, tabletop or floor

Animation

None

Dimensions

14" diameter, 6' tall, (55" wide with wings extended)

Total Weight

260 lbs.

Mode of Transportation

Motor Freight

Value for Insurance Purposes

\$4750.00

Setup Requirements:

Equipment

None

Labor

Two men

Electrical

None

Area

5' x 5'

Setup Time

30 minutes

Disassembly Time

30 minutes

No. of Crates

One

Size

77" x 35" x 26"

Skylab Table-top Exhibit (OC-2, reference Code M-86) (OC-3, reference 76685, 76686)

A 1:48 scale model Skylab with the workshop portion cut away to show the bi-level workshop interior. The model is encased in a 27" wide x 18-1/2" deep x 34" high plexiglass display case. The information panels contain photographs and copy explaining Skylab program mission objectives.

Data:

Type

Indoor, tabletop

Animation

None

Dimensions

5' wide, 18-1/2" deep

Total Weight

65 lbs.

Mode of Transportation

Hand carry, or air freight

Value for Insurance Purposes

\$1,220.50

Setup Requirements:

Equipment

Standard desk or table

Labor

Two men

Electrical

None

Setup Time

30 minutes

Disassembly Time

30 minutes

Area

8' x 5'

No. of Crates

2

Size(s)

36" x 27" x 6"

30" x 10" x 14"

Skylab Rollout Exhibit (OC-2, reference Code MSF-39) (OC-3, reference 76830)

This is a self-contained cabinet on rollers. It includes a three-dimensional painting of the Skylab vehicle in Earth orbit (protected by a plexiglass cover), and an information panel with back-lighted color transparencies on Skylab experiments, and astronaut accommodations.

Data:

Type

Indoor, floor

Animation

None

Dimensions

90" wide, 40" deep, 80" high

Total Weight

1130 lbs.

Mode of Transportation

Motor Freight

Value for Insurance Purposes

\$2,370.00

Setup Requirements:

Equipment

Forklift

Labor

Two men

Electrical

110W AC electrical outlet (grounded)

Area

10' x 10'

Minimum Doorway Clearance

42" x 83"

Setup Time

1 hour

Disassembly Time

1 hour

No. of Crates

1

Size

101" x 50" x 93"

Skylab Exhibit (OC-2)

Indoor floor display. Represents medical aspects of Skylab. About 12' wide x 4' deep x 6' high.

Skylab Column Exhibit With 1:96 Scale Model (OC- 3, reference 76935, 76933)

This is a free-standing aisle exhibit mounted on a carpeted dais. The top portion of the column is of clear plexiglass and houses a 1:96 scale model of Skylab which rotates on a dais inside the enclosure. A wrap-around back-lighted information panel with color transparencies is located underneath the rotating model. The exhibit explains Skylab mission objectives and astronaut accommodations for living and working in space.

Data:

Type

Indoor, free-standing, aisle exhibit

Animation

Rotating Skylab model

Dimensions

Approximately 2 feet diameter, 5 feet high, on 3 feet diameter base

Total Weight

225 lbs.

Mode of Transportation

Motor Freight

Value for Insurance Purposes

\$2,500.00

Setup Requirements:

Equipment

None

Labor

Two men

Electrical

110V electrical outlet (grounded)

Area

5' x 5'

Setup Time

2 hours

Disassembly Time

2 hours

No. of Crates

2

Size(s)

28" x 28" x 61"

16" x 11" x 8-1/2"

Skylab Triad Exhibit (OC-3, reference 76264)

This exhibit contains a 1:48 scale model of Skylab suspended above a model of Earth. Three information panels, mounted in a triad above the base, discuss the Apollo Telescope Mount, Skylab launch profiles and Skylab program objectives. A 35mm slide projector presents a brief rear-projected slide show on Skylab astronaut training and Skylab facilities.

Data:

Type

Indoor, floor (walk-around)

Animation

Slide show

Dimensions

Approximately 8' diameter, 7' high

Total Weight

2027 lbs.

Mode of Transportation

Motor Freight

Value for Insurance Purposes

\$3,450.00

Setup Requirements:

Equipment

Two 6' step-ladders, forklift for unloading (if possible)

Labor

2 men

Electrical

110V AC electrical outlet (grounded)

Area

10' x 10'

Setup Time

4 hours

Disassembly Time

4 hours

No. of Crates

7

Size(s)

90" x 42" x 99"

124" x 67" x 30"

33" x 50" x 10"

42" x 41" x 27"

52" x 51" x 31"

Skylab Compatible "A" Exhibit (OC-3, reference 76351, 76693)

This is a small standup theatre which comfortably accommodates from 7 to 10 people during a 7-minute slide presentation on Skylab, the United States' first space station. Four slide projectors are used in this exhibit to produce full screen, half screen and animated slide sequences on Skylab, its mission objectives, and the Earth applications which may come from such orbital studies. The slide projectors, music and narrative are synchronized and changed electronically through a four-track master tape recording. This exhibit is designed primarily for general public audiences. A 1:20 scale model of Skylab is exhibited on the outside of the theatre shell (optional).

Data:

Type

Indoor, floor

Animation

Slide show, narrative, special effects, music

Dimensions

17' wide, 12' high, 21' long

Total Weight

4170 lbs.

Mode of Transportation

Motor Freight

Value for Insurance Purposes

\$5,396.00

\$13,879.00 with model

Setup Requirements:

Equipment

10' step-ladder, forklift

Labor

4 men

Electrical

Two 110V AC electrical outlets (grounded)

Area

20' x 25" (12' ceiling)

Setup Time

1 day

Disassembly Time

1 day

No. of Crates

5

Size

45" x 40" x 100"

46" x 55" x 136"

31" x 52" x 140"

27" x 52" x 140"

27" x 52" x 128"

"American Living and Learning in Space" Van Exhibit (OC-3, reference 249)

This is a self-contained traveling exhibit approximately 40-feet long, 14-feet high and 8-feet wide. The van emphasizes NASA's Apollo, Space Shuttle and Skylab programs, and the craftsmanship and effort required by NASA personnel for the success and safety of such space programs. The van contains an actual space suit, pictures of the astronauts, samples of space food, a display of microminiaturization, and several models of various spacecraft and launch vehicles used in the exploration of space along with hardware and materials used in their development. A three-dimensional diorama of astronauts exploring the moon with the Lunar Roving Vehicle (LRV) is also exhibited in the van. Another display shows many Earth applications of space technology.

Data:

Type

Outdoor, van

Viewers accommodated

90 per hour

Animation

Yes, several audience participation items

Dimensions

40' x 14' x 18'

Total Weight

Approximately 12,000 lbs.

Mode of Transportation

Government or leased truck

Value for Insurance Purposes

\$50,000.00

Setup Requirements:

Equipment

None

Labor

Two men for setup, and one licensed electrician (van driver responsible for van placement)

Electrical

208/220V, single phase, 60Hz, 25 amp. electrical service

Area

50' x 14' x 14' with maneuvering room

Setup Time

4 to 6 hours

Disassembly Time

4 to 6 hours

"Craftsmanship Van 250 Exhibit" (OC-10)

The Craftsmanship Van is a travelling exhibit housed in a standard 50' long trailer similar to those commonly used for hauling freight. A number of displays within the van present information on America's space achievements, space programs, and benefits derived from space technology. Approximately 23 major features are displayed. The exhibit is designed for motivational effort to inspire aerospace workers to assume a greater sense of responsibility for assuring quality in their everyday job performance, and consequently, safe and reliable equipment and systems.

Exhibit Data:	Type.....	Indoor, floor
	Models.....	
	Animation.....	
	Dimensions.....	50' long x 14'wide x 14" high
	Total weight.....	Not applicable
	Mode of Transportation.....	Leased truck
	Value for Insurance Purposes.....	None

Exhibit Setup Requirements:

Equipment.....	None
Electrical.....	Outlets or connections for 220 volt, single phase 60 hz; 100 amp service
Labor.....	3 men (including one electrician)
Area.....	50' long x 14' high x 14' wide with maneuver- ing space.
Setup time.....	2 hours
Disassembly time.....	2 hours
No. of crates.....	None
No. of Size(s).....	N/A

"Skylab Exhibit" (OC-10, reference code MSFC #86002)

This exhibit is a three-panel display consisting of one large panel oil painting (showing vehicle launches, Skylab in Earth-orbit, splashdown of command module, and the three Skylab crews), and two smaller panels with various photos of Skylab's experiments. A taped message is included in the display. The exhibit is designed for motivational effect to inspire aerospace workers to assume a greater sense of responsibility for assuring quality in their everyday job performance, and consequently, safe and reliable equipment and systems.

Exhibit Data: Type.....Indoor, floor
 Models.....None
 Animation..... None
 Dimensions..... 10' long x 5' wide x 7' high
 Total weight..... 1000 pounds
 Mode of Transportation... Motor freight
 Value for Insurance Purposes... None

Exhibit Setup Requirements:

Equipment.....Forklift (for crates)
Electrical.....one 110 vac elect outlet (grounded)
Labor.....2 men
Area.....14' x 71
Setup time.....2 hours
Disassembly time..... 2 hours
No. of crates..... One
Sizes.....62"H x 53"W x 120"L

"Astronaut Panel Exhibit" (OC-10, reference MSFC #86001)

This exhibit consists of four 4'x8' curved panels displaying an oil painting of an astronaut engaged in extravehicular activity, color photographs of the astronauts, and scale models of the Saturn 1B and Saturn V vehicles toward creating a sense of responsibility in aerospace workers concerning safety and the overall Aerospace Awareness Program.

The exhibit is designed for motivational effect to inspire aerospace workers to assume a greater sense of responsibility for assuring quality in their everyday job performance, and consequently, safe and reliable equipment and systems.

Exhibit Data: Type.....Indoor, floor
 Models.....1 - 1/200 scale Saturn V
 1 - 1/200 scale Saturn IB
 Animation.....None
 Dimensions..... 16' long x 3' wide x 8' high
 Total weight..... 700 pounds
 Mode of transportation..... Motor Freight
 Value for Insurance Purposes.. None

Exhibit Setup Requirements:

Equipment.....Forklift
Electrical.....None
Labor.....2 men
Area..... 17' x 6'
Setup time..... 2 hours
Disassembly time.....2 hours
No. of Crates.....One
Size(s).....38"H x 56"W x 96" L

"Skylab Exhibit" (OC-10, reference code AAP851, MSFC #86003)

This exhibit is a three-panel display consisting of one large oil painting of the Skylab with an astronaut floating outside in space, and two smaller panels displaying photo transparencies of the Skylab experiments. Short statements relating to the mission accompany the photos. The exhibit is designed for motivational effect to inspire aerospace workers to assume a greater sense of responsibility for assuring quality in their everyday job performance, and consequently, safe and reliable equipment and systems.

Exhibit Data: Type.....Indoor, floor
 Models.....None
 Animation..... None
 Dimensions.....7' high x 4' wide x 10' long
 Total weight..... 1000 pounds
 Mode of Transportation... Motor freight
 Value for Insurance Purposes....None

Exhibit Setup Requirements:

Equipment.....Forklift (for crates)
Electrical.....One 110 vac elect outlet (grounded)
Labor.....2 men
Area.....14' x 7'
Setup time.....2 hours
Disassembly time.....2 hours
No. of crates.....1
No. of size(s)..... 120" long x 56" wide x 62" high

"Skvlab Models" (OC-10, reference codes: 1/96 - 76804; 1/48 - 76410; 1/20 - 76799)

Exhibit Data: Type.....Indoor, floor and table top
Models.....Various, 1/96, 1/48, 1/20
Animation.....None
Dimensions.....1/96 model, 1/48 model, 1/20
model
Mode of Transportation.....Motor freight/air freight
Value for Insurance Purposes.. None

Equipment.....	Table (varies with display)
Electrical.....	None
Labor.....	1 man
Area.....	4 square feet
Setup time.....	30 minutes
Disassembly time.....	30 minutes
No. of crates.....	One (each model)
No. of sizes.....	(Varies with scale)

ATM Exhibit (OC-3)

A curved triad panel with backlighting is supported from the exhibit base by legs. Depicted on the panel is a synopsis of each solar telescope. A 1:48 scale Skylab is suspended from the triad. A 1:10 scale of the Apollo Telescope Mount rests on the exhibit base. Solar telescopes were contained in the Apollo Telescope Mount. Physical size is 7' high and 8' in diameter.

Earth Resources Exhibit (OC-3)

Curved illustrated panels depict various aspects of Skylab. A 1:48 scale Skylab is mounted on one panel. Physical size is about 8' wide x 6' deep x 6' high.

Skylab Solar Observatory Exhibit (OC-3)

The seven foot high, cylindrical exhibit has a base that supports a plexiglass enclosure. Within the enclosure is a 1:48 scale Skylab. Around the enclosure's base are seven solar photographs. Exhibit diameter is 4 feet.

Skylab Benefits Exhibit (OC-3)

An eight foot high, cylindrical exhibit with a base that supports five illustrated panels. Above the panels is a plexiglass enclosed 1:48 scale Skylab. Exhibit diameter is about 3-1/2 feet.

Skylab Walk-through Exhibit (OC-3)

A brief slide presentation covers launch, meteoroid shield problem, sunshade deployment, and several on-board photographs.

Materials Processing in Space Exhibit (OC-3)

A single panel display of a Materials Processing Facility prototype with a "voice over slides" unit. This facility was used in Skylab for experiments involving space processing techniques. Exhibit size is 8' wide x 2-1/2' deep x 7' high.

Comet Kohoutek Exhibit (OC-3)

A 4' x 8' panel with photographs and a general explanation of Comet Kohoutek.

Student Experiment Exhibits

Eleven table-top exhibits represent selected student experiments aboard Skylab. Back lighting and flood lighting is used in the 5' wide x 2-1/2' deep x 4-1/2' high exhibits. Subject matter is identified in the following exhibit titles. The student investigator follows the experiment titles.

Bacteriology Exhibit (OC-3)

Bacteria and Spores Experiment - Robert L. Staehle	ED-31
In-Vitro Immunology Experiment - Todd A. Meister	ED-32

Physiology and Physics Exhibit (OC-3)

Motor Sensory Performance Experiment - Kathy L. Jackson ED-41

Neutron Analysis Experiment - Terry C. Quist ED-76

Zoology Exhibit (OC-3)

Web Formation Experiment - Judith S. Miles ED-52

Botany Exhibit (OC-3)

Plant Growth/Plant Phototropism Experiment - Joel G. Wordekemper/
Donald W. Schlack ED-61/62

Cytoplasmic Streaming Experiment - Cheryl A. Peltz ED-63

Physics Exhibit (OC-3)

Capillary Study Experiment - Roger G. Johnston ED-72

Physics Exhibit (OC-3)

Mass Measurement Experiment - Vincent W. Converse ED-74

Liquid Motion Experiment - W. Brian Dunlap ED-78

Earth Observation Exhibit (OC-3)

Atmospheric Attenuation of Energy - Joe B. Zmolek ED-11

Volcanic Study Experiment - Troy A. Crites ED-12

Astronomy Exhibit (OC-3)

Libration Clouds Experiment - Alison Hopfield ED-21

Objects Within Mercury's Orbit Experiment - Daniels C. Bochsler ED-22

Astronomy Exhibit (OC-3)

Quasars Experiment - John C. Hamilton ED-23

UV From Pulsars Experiment - Neal W. Shannon ED-26

Astronomy Exhibit (OC-3)

X-Ray Stellar Classes Experiment - Joe W. Reihs ED-24

X-Rays from Jupiter Experiment - Jeanne L. Leventhal ED-25